



## Memorandum

**To:** Honorable Mayor Simpson and Members of the Frisco City Council

**cc:** George Purefoy, City Manager  
Ron K. Patterson, Assistant City Manager

**From:** Brian A. Moen, P.E., Assistant Director of Engineering Services  
Shelley Lang, P.E., Senior Traffic Engineer

**Date:** March 25, 2010

**Subject:** Consider and act upon an Ordinance to change the existing posted speed limit on FM 2934 (Eldorado Parkway) from 45 mph to 50 mph from FM 423 to the Dallas North Tollway contingent upon the acceptance by the Texas Transportation Commission.

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**Action Requested:** Consider and act upon an Ordinance to change the existing posted speed limit on FM 2934 (Eldorado Parkway) from 45 mph to 50 mph from FM 423 to Dallas North Tollway contingent upon the acceptance by the Texas Transportation Commission.

**Background Information:** Eldorado Parkway was recently reconstructed as a six lane divided roadway between FM 423 and the Dallas North Tollway. This section of Eldorado Parkway is operated and maintained by the Texas Department of Transportation (TxDOT). The existing 45 mph posted speed limit was based on previous speed studies conducted by TxDOT when this section of Eldorado Parkway was a two-lane, undivided roadway. Because of the recent reconstruction of the roadway to six lanes, TxDOT conducted new speed studies. Speed limits on state roads are established by the following criteria published by the Texas Department of Transportation in the "Procedures for Establishing Speed Zones":

- Speed limits should be set based on spot speed studies and the 85<sup>th</sup> percentile operating speed. Legal minimum and maximum speeds should establish the boundaries of the speed limits. If an existing roadway section's posted speed limit is to be raised, the roadway's roadside features should be examined to determine if modifications may be necessary to maintain roadway safety.

- It is appropriate for posted speed limits to be based on the 85<sup>th</sup> percentile speed, even for those sections of roadway that have an inferred design speed lower than the 85<sup>th</sup> percentile speed. Posting a roadway's speed limit based on its 85<sup>th</sup> percentile speed is considered good and typical engineering practice. This practice remains valid, even where the inferred design speed is lower than the resulting posted speed limit. In such situations, the posted speed limit would not be considered excessive or unsafe.
- Arbitrarily setting lower speed limits at point locations due to a perceived shorter than desirable stopping sight distance is neither effective nor good engineering practice.
- If a section of roadway has (or is expected to have) a posted speed in excess of the roadway's inferred design speed and a safety concern exists at the location, then appropriate warning or informational signs should be installed to warn or inform drivers of the condition. Slightly shorter than desirable stopping sight distances do not present an unsafe operating condition, because of the conservative assumptions made in establishing desirable stopping sight distances. It is important to remember that any sign is a roadside object and that it should be installed only when its need is clearly demonstrated.
- New or reconstructed roadways (and roadway sections) should be designed to accommodate operating speeds consistent with the roadway's highest anticipated posted speed limit based on the roadway's initial or ultimate function.

The results of the most recent engineering study completed by TxDOT on this section of Eldorado Parkway indicate that the 85<sup>th</sup> percentile speed has increased from 45 mph to 50 mph. TxDOT will allow the posted speed limit to be lower than the resulting 85<sup>th</sup> percentile speed when one or more of the following factors are met:

- Narrow roadway pavement widths (20 feet or less)
- Horizontal or vertical curves (possible limited sight distance)
- Hidden driveways and other developments (possible limited sight distance)
- High driveway density
- Crash history along the location
- Rural residential or developed areas
- Lack of striped, improved shoulders (constricted lateral movement)

However, TxDOT and City staff believe that at this time none of these factors are met on the new widened section of Eldorado Parkway between FM 423 and the Dallas North Tollway. The City typically requests that TxDOT conduct speed studies on their roadways within the City at least once every three years or when development fills in within this section of Eldorado Parkway. The 85<sup>th</sup> percentile speeds will likely drop once more development occurs and driveway densities increase along this section of Eldorado Parkway. This was the case on Preston Road, because when it

was first reconstructed as a six-lane divided roadway between State Highway 121 and Main Street the 85<sup>th</sup> percentile speed resulted in a posted speed limit of 55 mph. However, as new development occurred and driveway densities increased along this section of Preston Road the 85<sup>th</sup> percentile decreased to 45 mph.

The attached letter from TxDOT dated February 26, 2010 states that TxDOT recommends increasing the existing posted speed limit on Eldorado Parkway from 45 mph to 50 mph starting at FM 423 and extending to the Dallas North Tollway. Engineering staff concurs with TxDOT's recommendation and has prepared an ordinance for the speed limit change. Staff is requesting that City Council provide their approval of this ordinance, which will then go to the Texas Transportation Commission for their approval. The posted speed limit signs will be changed once both of these approvals have occurred to increase the speed limit on this section of Eldorado Parkway.

**Alternatives:** The City Council could consider the following alternatives:

- Approval of ordinance to increase the speed limit on Eldorado Parkway from 45 mph to 50 mph from FM 423 to the Denton County Line
- Send back to staff with direction

**Financial Considerations:** None. The new speed limit traffic signs will be installed by the Texas Department of Transportation Denton County Area Office.

**Legal Review:** City legal staff has reviewed the ordinance.

**Supporting Documents:**

- Ordinance
- Location Map
- TxDOT letter dated February 26, 2010
- TxDOT's speed zone maps showing results of speed study conducted

**Staff Recommendation:** Staff recommends the approval of the attached Ordinance.